

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-20 (Canceled)

21. (New) A tool comprising a substrate made out of cemented carbide, and at least one layer of nanocrystalline diamond consisting of crystallites of 1-100 nm arranged directly on a surface of said substrate, where a surface of said layer has a surface roughness R_z which is less than the surface roughness R_z of said substrate surface.
22. (New) Tool according to claim 21, wherein said surface of said layer has a surface roughness R_z of less than 2 μm .
23. (New) Tool according to claim 21, wherein said surface of said layer has a surface roughness R_z of less than 1 μm .
24. (New) Tool according to claim 21, wherein said layer being of unordered, untexturized crystallites, wherein the crystallites are between 5 and 100 nm in size.
25. (New) Tool according to claim 21, wherein said tool is a machining tool.
26. (New) Tool according to claim 21, wherein said layer comprises a non-columnar crystal structure.
27. (New) Tool according to claim 21, wherein further layers are arranged on said nanocrystalline diamond layer.
28. (New) Method for CVD coating, comprising a coating procedure under a carbon-containing gas atmosphere, wherein a diamond layer is deposited directly on a substrate made out of cemented carbide or silicon, wherein during said coating procedure, process parameters are

varied such that said parameters are changed multiple times between a first and a second operating state,

wherein in said first operating state there is a higher carbon over-saturation of said carbon-containing atmosphere close to said substrate, and in said second operating state there is a lower over-saturation of said carbon-containing atmosphere close to said substrate,

wherein the change between the two operating states is effected such that during the time in which the layer grows by 1 μm , at least 200 alternations are carried out between the operating states for depositing a nanocrystalline diamond layer on said substrate, wherein the surface of said layer has a surface roughness R_z which is less than the surface roughness R_z of said substrate surface.

29. (New) The method according to claim 28, wherein during the time in which the layer grows by 1 μm , at least 500 alternations are carried out between the operating states.
30. (New) The method according to claim 28, wherein the first and the second operating states are applied each for no more than 50 seconds.
31. (New) The method according to claim 28, wherein the duration of the first and second operating state is selected such that the quotient of the time durations is between 0.5 and 2.
32. (New) The method according to claim 28, wherein in the second operating state a process gas temperature is higher than in a first operating state.
33. (New) The method according to claim 28, wherein in the first operating state the coating atmosphere has a higher effective carbon content than in the second operating state.
34. (New) The method according to claim 28, wherein in the first operating state the coating atmosphere has a lower oxygen content than in the second operating state.

35. (New) Method for CVD coating, comprising a coating procedure under a carbon-containing gas atmosphere, wherein a diamond layer is deposited directly on a substrate made out of cemented carbide or silicon,

wherein during said coating procedure process parameters are varied such that said parameters are changed multiple times between a first and a second operating state,

wherein in said first operating state there is a higher carbon over-saturation of said carbon-containing atmosphere close to said substrate and in said second operating state there is a lower over-saturation of said carbon-containing atmosphere close to said substrate,

wherein in the first operating state the coating atmosphere has a lower oxygen content than in the second operating state.